REMARKS

Claims 1-20 are pending. Claims 1, 10-13, and 15-20 have been amended. Claims 2-4 and 6 are original. Claims 5, 7-9, and 14 have been previously presented.

The foregoing amendments do not involve new matter. Support for amended claims 1, 10-13, and 15-20 can be found in Applicants' specification, for example, in page 7, lines 8-15; Figs. 1 and 2; and original claims 1 and 11-13.

1. Claim Interpretation

The Examiner asserted that "[t]he term "dielectric layer" is not explicitly defined in the specification. In particular, the term is not explicitly claimed as distinct from the photoconductive layer." (Office Action, page 3) The Applicant respectfully submits that both the term "dielectric layer" and the term "photoconductive layer" are well known in the art. A dielectric material is commonly understood to mean one which will hold an electric charge in a selected charge pattern. A photoconductor is commonly understood to mean a special case of a dielectric which will hold an electric charge but upon application of light the dielectric material becomes conductive and parts of the material can be discharged to give the selected charge pattern. See, for example, Schaffert, "Electrophotography", *The Focal Press*, pp. 86-96 (1965) (Appendix A); and US 5,289,214, column 1, lines 27-37, column 2, lines 6-10.

As argued in the prior responses, the Applicant agrees that in its broadest interpretation, a dielectric layer covers a photoconductive layer in that a photoconductive layer is a special case of a dielectric layer. The Applicant, however, disagrees with the Examiner's statement that "the term

["dielectric layer"] is being given the broadest reasonable interpretation … as *interchangeable* with a photoconducting layer, as recited in claim 8, for example, where the photoconducting layer is a dielectric layer" (Office Action, page 3; emphasis added). Again, although in its broadest interpretation, a dielectric layer covers a photoconductive layer, these two terms are not interchangeable. Put in another way, the dielectric layer is a genus and the photoconductive layer is a species. A person having ordinary skill in the art would understand that a genus term is not interchangeable with a species term.

2. Claim Rejections under 35 U.S.C. § 103(a)

A. Claims 1-5, 7-9, 11-13, And 15-20

Claims 1-5, 7-9, 11-13, and 15-20 have been rejected under 35 U.S.C. § 103(a) over McEntee et al. (U.S. Pat. Pub. No. 2004/0050701) in view of Loewy et al. (WO2000025936). The Applicant respectfully traverses this rejection.

The Examiner has conceded that McEntee does not teach a continuous chemical layer and a chemically reactive surface for compounds deposited on the surface (Office Action, page 9). The Examiner nevertheless attempted to cure this deficiency of McEntee by asserting that Loewy teaches a continuous chemically functional layer, the chemically functional layer providing a protective layer for the dielectric layer and chemically reactive surface for compounds deposited on the surface (Office Action, page 9). The Examiner further asserted that it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention was made to have extended the teachings of McEntee to include the continuous layer of

chemical elements as taught by Loewy to arrive at the claimed invention with a reasonable expectation of success (Office Action, page 11).

The Examiner's reliance upon Loewy to cure the deficiency of McEntee is misplaced because Loewy and McEntee could not be combined to form a continuous chemical layer. McEntee discloses a method and apparatus to guide droplets of materials to a plurality of locations (deposition locations) on an array deposition sites (see paragraphs [0009]-[0014]). The deposition sites are in an array form, isolated and discreet from each other (see Fig. 2; and paragraphs [0046] and [0108]). The deposited materials (the asserted chemically functional layer; Office Action, page 4) chemically bond to the array surface at the preferred, isolated deposition sites (see paragraph [0050]). Since the chemically functional layer as disclosed in McEntee is in a non-continuous array form, a person having ordinary skill in the art would understand that the continuous application of chemical components as taught by Loewy could not be used in the McEntee invention.

Moreover, any proposed modification to introduce a continuous chemically functional layer to the McEntee invention, such as taught by Loewy, would defeat the purpose of the McEntee invention. As discussed above, the chemically functional layer of McEntee (the deposited materials) is in a non-continuous array form. Each deposition location on the non-continuous array could have a different chemical material deposited (see paragraph [0072]). A continuous application of the same chemical components, as taught by Loewy, to the McEntee invention would frustrate what the McEntee invention is designed to achieve.

Further, the disclosures of McEntee and Loewy, even viewed together, do not teach or suggest all the claimed limitations as recited in amended independent claims 1 and 11-13. Loewy discloses electrostatic deposition of

dry particles onto a substrate and then the spraying of adhesive droplets onto the particles to hold the dry particles in place (see Figs. 1-2; and page 8, line 15 to page 10, line 17). A person having ordinary skill in the art would understand that the layer of particles in Loewy would not provide a protective layer because there would necessarily be voids between the deposited particles (see Figs. 1-2). Also, the adhesive droplets applied over the particles clearly would not provide a protective layer because if they did then the chemicals on the particles would not be able to react as is the intention of Loewy, which also means the adhesive applied over the particles necessarily is not continuous. The adhesive is clearly shown in Figures 1B and 1C as being droplets.

Loewy indeed explicitly teaches that the layer is a powder coating and is permeable in nature.

> Powder deposited on a substrate surface is often very loosely bound at least after the image force dissipates or the conductor creating the image force is removed. If the surface is physically shaken, inverted or otherwise agitated, any powder pattern on the surface can dislodge and the powder can be dispersed. (See page 8, lines 16-19)
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> The method of the present invention provides for adhering loosely bound particles, for instance a powder or powder/carrier mixture, to a surface. The method preferably allows for the surface-deposited powder to be handled or transported without the loss or displacement of the powder. (See page 8, lines 20-23)
>
> In one embodiment, the polymer can be coated by using a fogging apparatus described in Figure 2, which produces a gentle fog of material which, after landing on the deposited powder, acts to prevent the removal of the powder from the membrane. This procedure results in the deposited powder being well-bound to the membrane. Polymers, polymer mixtures, and deposition conditions can be selected by one skilled in the art to produce films with desired physical characteristics, such as

> permeability, thickness, melting point, glass transition temperature, and the like. (See page 8, line 33 to page 9, line 6)

A person having ordinary skill in the art would not characterize such a powder coating as a chemically protective layer because the permeable powder layer would not protect the underlying dielectric layer from the chemicals, such as strong Lewis acids, commonly used in subsequent reactions the McEntee and Loewy substrates would be subject to.

In sharp contrast, the substrate adapted for selective micron and nanometer scale deposition as recited in amended independent claim 1 comprises a continuous chemically protective and functional layer on the dielectric layer, the chemically protective and functional layer providing a protective layer for the dielectric layer and a chemically reactive surface for compounds deposited on the surface. The substrate as recited in amended independent claim 11 comprises a continuous chemically protective and functional layer on the photoconductive layer, the chemically protective and functional layer providing a protective layer for the photoconductive layer and a chemically reactive surface for compounds deposited on the surface. The substrate adapted for manufacture of DNA arrays as recited in amended independent claim 12 comprises a continuous chemically protective and functional layer on the photoconductive layer, the chemically protective and functional layer providing a protective layer for the photoconductive layer. The substrate adapted for manufacture of DNA arrays as recited in amended independent claim 13 comprises a continuous chemically protective and functional layer on the photoconductive layer, the chemically protective and functional layer providing a protective layer for the photoconductive layer.

In view of the above, the Applicant respectfully submits that McEntee in view of Loewy would not render amended independent claims 1 and 11-13

obvious. Accordingly, the rejection of amended independent claims 1 and 11-13 have been overcome and should be withdrawn.

Moreover, the dependent claims are patentable since they depend from the patentable amended independent claims 1 and 11-13.

B. Claims 6 And 10

Claims 6 and 10 have been rejected under 35 U.S.C. § 103(a) over McEntee in view of Loewy and further in view of Salafsky et al. (U.S. Pat. Pub. No. 2002/0094528). The Applicant respectfully traverses this rejection.

Claims 6 and 10 are both dependent on amended independent claim 1. Claim 1 has been shown to be patentable over McEntee in view of Loewy. Further, the claimed features of amended independent claim 1, as discussed above and shown to be not found in McEntee and Loewy, are not taught by Salafsky. Thus, the disclosures of McEntee, Loewy and Salafsky, even viewed together, would not render the invention of amended independent claim 1 obvious. Claim 1, and claims 6 and 10 dependent thereon, are thus patentable over McEntee in view of Loewy and further in view of Salafsky.

3. Claim 14

There is no rejection of claim 14 in the present Office Action. Moreover, the Examiner stated that "[a]ny [prior] rejection not reiterated in this action has been withdrawn as being obviated by the amendment of the claims." (Office Action, pages 2-3). The Applicant respectfully requests that the Examiner confirm that claim 14 is patentable.

4. Conclusion

In view of the above, the Applicant respectfully submits that the claims are in condition for allowance. The Examiner is kindly invited to contact the undersigned attorney to expedite allowance.

Respectfully submitted,

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